



CIVIL QUALITY CONSULTANTS & ENGINEERS

ISO 9001:2015 Certified & NABL Accredited
Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No:

CQCE/BBMP/SS/17/2022-2023

Date 14.07.2022

GRADATION FOR GSB (Grading V)

Client :

: Assistant Executive Engineer, Yeshwanthpura Sub Division, BBMP, Bangalore.

Agency :

: Sri. S Santhosh Kumar, Contractor, Bangalore.

Name of work:

: Filling of potholes and road cut portion in ward no. 17, J P Park for the year 2021-22, BBMP, Bangalore

BIS Code:

IS 2386 Part (1):1963

IS 2720 part (5):1985

Date of Testing

12.07.2022 to 14.07.2022

Oven Dry Wt (gm) : 13000

TABLE - 1

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirements as per MORTH 5th edition table 400.1
75	0	0	0.00	100	100
53	1625	1625	12.50	87.50	80-100
26.5	2358	3983	30.64	69.36	55-90
9.5	2302	6285	48.35	51.65	35-65
4.75	1785	8070	62.08	37.92	25-50
2.36	2715	10785	82.96	17.04	10-20
0.85	1745	12530	96.38	3.62	2-10
0.425	250	12780	98.31	1.69	0-5

Table 2

Sl. No.	Particulars	Test Results	Requirements as per MORTH 5th edition table 400.2
1	Liquid Limit, %	23.00	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading V

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For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Corporate Off.: No. 133, Bhuvaneshwarinagar, Doddabasti Main Road, Bangalore-560 05

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Testing of Construction Material - Mechanical, Soil,
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Job No.: CQCE/BBMP/SS/17/2022-2023

Date : 16.07.2022

GRADATION FOR WMM

Client : Assistant Executive Engineer, Yeshwanthpura Sub Division, BBMP, Bangalore.
Agency : Sri. S Santhosh Kumar, Contractor, Bangalore.
Name of Work : Filling of potholes and road cut portion in ward no. 17, J P Park for the year 2021-22, BBMP, Bangalore
IS Code: : IS 2386 (Part 1):1963(RA 2011)
Date of Testing : 16.07.2022
Material Type : Wet Mix Macadam

Oven Dry.Wt, gram

10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	271	271	2.7	97.3	95-100
22.4	2678	2949	29.5	70.5	60-80
11.2	2369	5318	53.2	46.8	40-60
4.75	1758	7076	70.8	29.2	25-40
2.36	1021	8097	81.0	19.0	15-30
0.600	568	8665	86.7	13.4	8-22
0.075	1236	9901	99.0	1.0	0-5

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Job No.: CQCE/BBMP/SS/17/2022-2023

Date: 16.07.2022

Aggregate Impact Value

Client	: Assistant Executive Engineer, Yeshwanthpura Sub Division, BBMP, Bangalore.
Agency	: Sri. S Santhosh Kumar, Contractor, Bangalore.
Name of the Work	: Filling of potholes and road cut portion in ward no. 17, J P Park for the year 2021-22, BBMP, Bangalore
IS Code	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Wet Mix macadam
Date of Testing	16.07.2022

Sl No.	Details	Test No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	385	387	
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	80	82	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	305	305	
4	Aggregate Impact value = percent fines $100 * (W_2/W_1) \%$	20.78	21.19	20.98

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%(As per MORTH Specification table 400.12)

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Job No.: CQCE/BBMP/SS/17/2022-2023

Date : 16.07.2022

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: Assistant Executive Engineer, Yeshwanthpura Sub Division, BBMP, Bangalore.
Agency	: Sri. S Santhosh Kumar, Contractor, Bangalore.
Name of Work	: Filling of potholes and road cut portion in ward no. 17, J P Park for the year 2021-22, BBMP, Bangalore
BIS code:	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	16.07.2022

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 400.12
1	Flakiness Index %	11.2	14.6	Combined Flakiness & Elongation index Max 35%
2	Elongation Index %	13.5	9.8	
	Combined Flakiness & Elongation index	24.70	24.4	

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Job No.: CQCE/BBMP/SS/17/2022-2023

Date 18.07.2022

ATTERBERG LIMITS TEST FOR WMM

Client : Assistant Executive Engineer, Yeshwanthpura Sub Division, BBMP, Bangalore.
Agency : Sri. S Santhosh Kumar, Contractor, Bangalore.
Name of Work : Filling of potholes and road cut portion in ward no. 17, J P Park for the year 2021-22, BBMP, Bangalore
IS Code: IS 2720(Part 5):1985
Date of Testing 16.07.2022 to 18.07.2022
Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	21.50	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No: CQCE/BBMP/SS/17/2022-2023

Date: 18.07.2022

TEST REPORT ON PAVING BITUMEN

Client	: Assistant Executive Engineer, Yeshwanthpura Sub Division, BBMP, Bangalore.
Agency	: Sri. S Santhosh Kumar, Contractor, Bangalore.
Name of work	: Filling of potholes and road cut portion in ward no. 17, J P Park for the year 2021-22, BBMP, Bangalore
BIS Code	IS 73:2013, IS 1203:1978, IS 1208:1978, IS 1205:1978, IS 1448(P-69):1969
Date of Testing	18.07.2022
Type of Mix	Seal Coat, VG 30
Source of Location	Hot Mix Plant

The results of the tests conducted on the bitumen sample using for Seal Coat

Sl.No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 0C, 100gms, 5sec, 1/10 mm	48	Min 45
2	Softening point, 0C	50	Min 47
3	Ductility at 250C, cm	98	Min 40
4	Flash Point, 0C	226	Min 220

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TEST RESULTS OF AGGREGATE IMPACT VALUE

Client : Assistant Executive Engineer, Yeshwanthpura Sub Division,
BBMP, Bangalore.

Agency : Sri. S Santhosh Kumar, Contractor, Bangalore.

Name of work : Filling of potholes and road cut portion in ward no. 17, J P Park for the year
2021-22, BBMP, Bangalore

Source / Location : Hot Mix Plant, Bangalore

BIS Code : IS 2386 Part (4):1963

Type of Mix : Seal Coat

Date of test : 18.07.2022

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W1 g	380	382	
2	Weight of aggregate passing 2.36 mm sieve after the test = W2 g	82	84	
3	Weight of aggregate retained 2.36 mm sieve after the test = W3 g	298	298	
5	Aggregate Impact value = percent fines	21.58	21.99	21.78
	100* (W2/W1) percent			

Comments:

→ Maximum allowable Aggregate Impact value for Seal Coat Macadam is 27% (Table 500-8 of MORTH specification)

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Date 18.07.2022

TEST RESULTS OF AGGREGATE SHAPE TEST (Flakiness & Elongation)

Client : Assistant Executive Engineer, Yeshwanthpura Sub Division, BBMP, Bangalore.

Agency : Sri. S Santhosh Kumar, Contractor, Bangalore.

Name of work : Filling of potholes and road cut portion in ward no. 17, J P Park for the year 2021-22, BBMP, Bangalore

BIS Code : IS 2386 Part (1):1963

Date of Test : 18.07.2022

Type of Mix : Seal Coat

Sl.No.	Flakiness Index Value(%)	Elongation Index Value(%)	Total(Combined Flakiness and Elongation)(%)	Requirements
1	11.60	12.20	23.80	Maximum allowable Combined Flakiness and Elongation Indices for Seal Coat is 35% as per Table 500.8 MORTH Specification.
2	13.40	10.50	23.90	

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Job No.: CQCE/BBMP/SS/17/2022-2023

Date: 20.07.2022

Specific Gravity And Water Absorption Test

Client	: Assistant Executive Engineer, Yeshwanthpura Sub Division, BBMP, Bangalore.
Agency	: Sri. S Santhosh Kumar, Contractor, Bangalore.
Name of the Work	: Filling of potholes and road cut portion in ward no. 17, J P Park for the year 2021-22, BBMP, Bangalore
BIS Code	IS 2386(Part 3):1963
Type of Mix	Seal Coat
Date of Testing	18.07.2022 to 20.07.2022

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2022	2024	2025	
2	Weight of basket suspended in water	W_2 g	754	754	754	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1268	1270	1271	
4	Weight of saturated surface dry aggregate in air	W_3 g	2014	2016	2018	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_s)$ g	746	746	747	
6	Weight of oven dried aggregate	W_4 g	2005	2007	2008	
7	Specific Gravity	$W_4 / (W_3 - W_s)$	2.688	2.690	2.688	2.689
8	Apparent Specific gravity	$W_4 / (W_4 - W_s)$	2.720	2.723	2.725	2.723
9	Water Absorption	$((W_3 - W_4) * 100) / W_4$	0.45%	0.45%	0.50%	0.47%

Comments:

→ Maximum allowable Aggregate Water absorption value for Seal Coat is 2.0%(As per MORTH table 500.8)

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Job No.: CQCE/BBMP/SS/17/2022-2023

Date: 16.05.2022

Aggregate Gradation Test	
Client	: Assistant Executive Engineer, Yeshwanthpura Sub Division, BBMP, Bangalore.
Agency	: Sri. S Santhosh Kumar, Contractor, Bangalore.
Name of the Work	: Filling of potholes and road cut portion in ward no. 17, J P Park for the year 2021-22, BBMP, Bangalore
BIS Code	IS 2386(Part 1):1963(RA 2011)
Sample I / D	Hot mix Plant, Bangalore.
Type of Mix	Seal Coat
Date of Testing	18.07.2022

Total Weight of Sample: 5000 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 511.2.2
11.20	0	0.0	0	100	100
2.36	5000	100.0	100.00	0.00	0
Pan	0	0.0	100.00	0.00	—

Total Weight of Sample: 5000 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 511.2.2
11.20	0	0.0	0	100	100
2.36	5000	100.0	100.00	0.00	0
Pan	0	0.0	100.00	0.00	—

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Job No.: CQCE/BBMP/SS/17/2022-2023

Date: 21.07.2022

BITUMEN CONTENT AND GRADATION DETERMINATION OF SEAL COAT AASHTO T 164 & AASHTO T 30

Client	: Assistant Executive Engineer, Yeshwanthpura Sub Division, BBMP, Bangalore.
Agency	: Sri. S Santhosh Kumar, Contractor, Bangalore.
Name of the Work	: Filling of potholes and road cut portion in ward no. 17, J P Park for the year 2021-22, BBMP, Bangalore
Date of Testing	21.07.2022

BITUMEN CONTENT DETERMINATION

Description	Test 1	Test 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	475	474
3. Weight of Asphalt and Mineral matter Extracted, g	-	8
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	25.00	26.00
7. Bitumen content in %	5.00	5.20
8. Average	5.10	

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